Rheology of San Carlos Olivine at High Pressure and High Temperature using CCD and IP *	X17B1

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Using the newly installed Bruker CCD detector and combined with the image plate facility, we have measured the rheological properties of San Carlos olivine on the Large Volume High Pressure Apparatus at X17B1 beamline. The variation of the rheological properties of San Carlos olivine with pressure and temperature was studied up to 10GPa and 1600°C. During the experiment, as the CCD detector can collect data very fast, it enabled us to conduct near real-time data collection on the diffraction frames of the sample. From the frames we have collected, we can see the diffraction peaks broadened with the increasing pressure and narrowed with the increasing temperature and relaxation time (see Figure 2 of Vaughan,*et al*, this volume). Now we are processing the data using the software provided by Bruker. The initial result shows that there are some uncertainties in determining the peak width on the collected data using CCD detector. The image plate technique probably can give a better result when calculating the peak width although the time resolution is not as good as the CCD detector. We are now trying to solve these problems associated with the data processing.

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